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(19) **United States**(12) **Patent Application Publication****Yan et al.**(10) **Pub. No.: US 2015/0124727 A1**(43) **Pub. Date: May 7, 2015**(54) **ACK/NAK BIT BUNDLING IN CARRIER
AGGREGATION SCENARIOS**(52) **U.S. Cl.**CPC **H04L 5/0046** (2013.01); **H04L 5/0055**
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(57)

ABSTRACT

Techniques are disclosed for ACK/NAK bit bundling in carrier aggregation scenarios. Such measures exemplarily comprise generating a set of acknowledgement bits confirming receipt of payload data of a radio frame in a carrier aggregation mode aggregating a primary and at least one secondary carrier, said radio frame being divided into a plurality of downlink subframes and uplink subframes, each of said downlink subframes comprising at least one codeword per carrier, each of said acknowledgement bits is allocated to one of said codewords of one of said downlink subframes, and applying spatial domain bundling and/or time domain bundling on said set of acknowledgement bits distinctive for each of said primary and said at least one secondary carrier, wherein said spatial domain bundling is an AND operation of all acknowledgement bits allocated to each codeword of one carrier of said primary and said at least one secondary carrier and one downlink subframe.

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